Nortronics®

Offers the most complete line of

MAGNETIC TAPE HEADS

AND ACCESSORIES

•ERASE-RECORD / PLAYBACK • RECORD / PLAYBACK • RECORD • ERASE

Choose from:

PREMIUM OR STANDARD VERSIONS

Track Size: 4-Track, 2-Track or Full Track.

Channels: 4-Channel, 3-Channel, Stereo or Monophonic.

Face Contour: Hyperbolic, Cylindrical or Relieved.

Case Sizes: 6 different R/P – 5 different Erase.

Impedances: 6 standard R/P – 3 standard Erase.

Gap Spacers: 50 to 500 Micro-inch deposited quartz.

Mounting: Base, Side, Rear or No Mount.
Plus ADJUSTABLE Mounting Assemblies.

(For complete electrical and mechanical data,
see the following 3 pages.)

THE NORTRONICS CO., INC.
8107 - 10th Avenue North, Minneapolis, Minnesota 55427
Phone: 612 + 545-0401

Nortronics® MAGNETIC TAPE HEADS

NORTRONICS magnetic tape heads are designed to offer highest quality performance and long dependable service. As the chief exponent and largest manufacturer of laminated core heads, Nortronics now offers a completely new line, with heads available in either PREMIUM or STANDARD laminated versions.

The STANDARD versions offer improved high frequency performance over that of conventional solid-core heads, plus the added features of hyperbolic all-metal face and precision deposited quartz gaps. They are recommended for non-critical applications where cost is primary.

Stereo B2Q (No Mount) · Mono B1QC (Side Mount) · Mono G1Q (Rear Mount) · Stereo Combo A2Q (Base Mount) · Mono Combo A1QC (No Mount) · 3-Channel B3Q (Side Mount) · 4-Channel BQQ (No Mount) · Stereo B2H (Base Mount)

- RECORD/PLAY
- RECORD
- COMBINATION (COMBO), ERASE-R/P

4-TRACK (Quarter Track), 3-TRACK,
2-TRACK (Half Track), FULL TRACK

The heads are shown with various mounting hardware attached to symbolize the variety of mountings available, but all are available in your choice of standard mounts; *base, side, rear* or *no mount*. Ask us if you have special mounting requirements. (See reverse side of next page for additional mounting brackets.)

HOW TO DETERMINE YOUR MODEL NUMBER

Because of the great variety of Nortronics heads and the large number of combinations of electrical and mechanical characteristics which are available, it is recommended that the Head Nomenclature Guide below be used in selecting the proper model number for your Record/Play, Record, or Combo head.

As a typical example of utilization of this system, the model number below describes a "Premium, 4-track (quarter track) mono combination (combo) erase-R/P head with centered track, No. 4 erase electrical code, No. 6K R/P electrical code, 100 micro inch R/P gap, "A" style case, *side mount* with erase section on *left*."

P—Denotes Premium Head (Standard has no prefix).

BASIC MODEL NUMBER

Erase Electrical Code—Combo Heads Only

R/P Electrical Code

P-A1QC46K-SL

Mounting Designator (See Below)

The Basic Model Number describes the Mechanical Characteristics of the head as follows:

- A— Letter denotes case outline style—see drawings below.
- 1— Denotes number of channels
  1—Mono 3—3-channel
  2—Stereo Q—4-channel
- Q— Denotes track system
  H—2-track (Half Track)
  Q—4-track (Quarter Track)
- C— Track Location Designator (Mono Heads only)
  NONE—Standard Stereo Offset
  C— Centered track
  Y—< .020 off center (G1HY)
  .040 off center (B1HY)

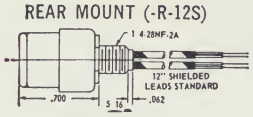
Another typical example would be a B2H4R-R-12S, "Standard, 2-track (half track) stereo *record-only* head, No. 4R record electrical code, 500 micro-inch gap, 'B' style case, *rear* mount, 12 inch shielded leads."

R/P AND COMBO MOUNTING DESIGNATORS follow model number in this fashion: "G1HY-N", *no mount*,

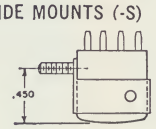
- "-B", standard *base mount*—R/P heads.
- "-BL", standard *base mount*—combo heads with R/P section to the left.
- "-BR", standard *base mount*—combo heads with R/P section to the right.
- "-S", standard *side mount*—R/P heads.
- "-SL", standard *side mount*—combo heads with R/P section to the left.
- "-SR", standard *side mount*—combo heads with R/P section to the right.
- "-R-12S", standard *rear mount* with 12 inch shielded leads.
- "-R-4U", standard *rear mount* with 4 inch unshielded leads.

STANDARD MOUNTS

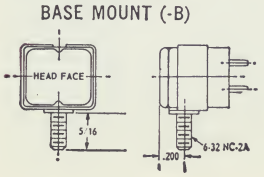
REAR MOUNT (-R-12S)

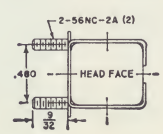


SIDE MOUNTS (-S)



BASE MOUNT (-B)





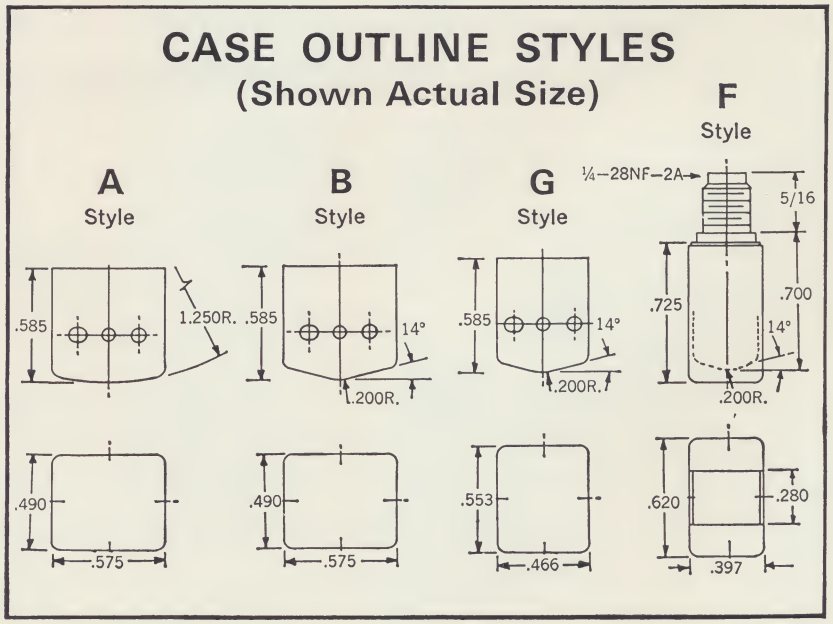
TYPICAL SPECIFICATIONS

TRACK SYSTEM	4-TRACK AND 3-TRACK (.043 IN. WIDTH)					
NORTRONICS BASIC MODEL NUMBER	MONO—B1QC, G1Q, A1QC, E1QC (Hyperbolic of A1QC) STEREO—B2Q, A2Q, E2Q (Hyperbolic of A2Q) 3-CHANNEL—B3Q (Not available with 2K Electrical Code)					
Electrical Code	4R	4K	6K	7K	7F	2K
Head Function	Record Only	Record/ Playback	Record/ Playback	Record/ Playback	Record/ Playback	Record/ Playback
Type of Circuit	Tubes/ Transistors	Transistors	Transistors	Tubes/ Transistors	Tubes/ Transistors	Tubes
Inductance, 1 KC	50 MHY	100 MHY	200 MHY	400 MHY	500 MHY	800 MHY
Impedance, 1 KC	320 Ω	650 Ω	1.3 K	2.5 K	3.3 K	5 K
Maximum Bias Frequency	250 KC	140 KC	120 KC	100 KC	100 KC	80 KC
*Resistance, D.C.	90 Ω	90 Ω	110 Ω	210 Ω	210 Ω	520 Ω
**Resistance, D.C.	90 Ω	90 Ω	200 Ω	390 Ω	390 Ω	700 Ω
***Resistance, D.C.	255 Ω	255 Ω	450 Ω	750 Ω	750 Ω	—
Gap Spacer	0.5-MIL	0.1-MIL	0.1-MIL	0.1-MIL	0.05-MIL	0.1-MIL
**Track Spacing	.136-IN.	.136-IN.	.136-IN.	.136-IN.	.136-IN.	.136-IN.
***Track Spacing	.100-IN.	.100-IN.	.100-IN.	.100-IN.	.100-IN.	.100-IN.
1 KC Crosstalk Rej.	55 DB	55 DB	55 DB	55 DB	55 DB	55 DB
FOR PREMIUM HEADS — AVERAGE 7.5 IPS			CONSTANT CURRENT RECORD/PLAYBACK			
Peak Bias Current, 60 KC	0.65 MA	0.70 MA	0.40 MA	0.25 MA	0.25 MA	0.16 MA
Bias Voltage RMS, 60 KC	7.5 V.	18 V.	25 V.	35 V.	50 V.	45 V.
Record Current	60 UA	60 UA	50 UA	35 UA	30 UA	25 UA
1 KC Output	—	0.9 MV	1.3 MV	1.8 MV	1.8 MV	2.6 MV
10 KC/1 KC Ratio	—	+1 DB	+1 DB	+1 DB	+2 DB	+2 DB
FOR PREMIUM HEADS — AVERAGE 3.75 IPS			CONSTANT CURRENT RECORD/PLAYBACK			
Peak Bias Current, 60 KC	0.50 MA	0.50 MA	0.32 MA	0.20 MA	0.20 MA	0.12 MA
Bias Voltage RMS, 60 KC	7.0 V.	13 V.	20 V.	25 V.	35 V.	35 V.
Record Current	50 UA	50 UA	44 UA	30 UA	25 UA	22 UA
1 KC Output	—	0.7 MV	1.0 MV	1.4 MV	1.4 MV	2.1 MV
10 KC/1 KC Ratio	—	−7 DB	−7 DB	−7 DB	−5 DB	−6 DB
FOR STANDARD HEADS — AVERAGE 7.5 IPS			CONSTANT CURRENT RECORD/PLAYBACK			
Peak Bias Current, 60 KC	—	1.1 MA	0.70 MA	0.42 MA	—	0.30 MA
Bias Voltage RMS, 60 KC	—	20 V.	25 V.	35 V.	—	45 V.
Record Current	—	70 UA	50 UA	35 UA	—	25 UA
1 KC Output	—	0.8 MV	1.2 MV	1.6 MV	—	2.4 MV
10 KC/1 KC Ratio	—	−3 DB	−3 DB	−3 DB	—	−2 DB

*Mono **Stereo ***3-Channel ****4-Channel

CASE OUTLINE STYLES

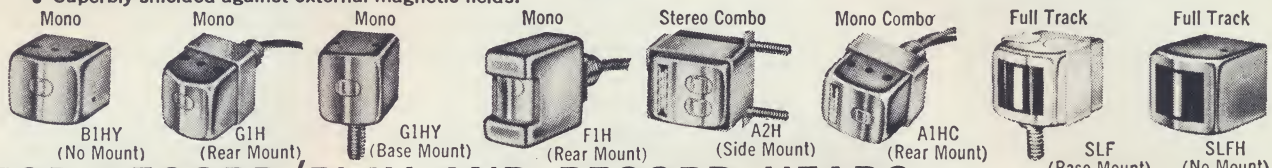
(Shown Actual Size)



ORIGINAL EQUIPMENT ON MAJOR BRAND RECORDERS

The PREMIUM series is a fully professional line of tape heads giving unsurpassed performance for broadcast, studio and exacting semi-professional applications. Long life and extended high frequency response at slower tape speeds are among the benefits of the features listed below:

- **Fine laminated, precision-lapped, low loss core structures.**
- **Deposited quartz gaps, as fine as 50 micro-inches resulting in exceptionaly clean sharp gap edges.**
- **Hyperbolic face contour gives intimate tape-to-gap contact without need for pressure pads, but is designed to allow use with pressure pads as well.**
- **Highly polished all-metal faces, greatly reduce oxide buildup and the need for frequent head cleaning.**
- **Compatible mechanically and electrically with older model Nortronics heads.**
- **Superbly shielded against external magnetic fields.**



FOR RECORD/PLAY AND RECORD HEADS

4-TRACK (.037 IN. WIDTH) BQQ 4-CHANNELS FOR ¼" TAPE			
4R	**4K**	**3K**	**3F**
Record Only	Record/ Playback	Record/ Playback	Record/ Playback
Tubes/ Transistors	Transistors	Tubes/ Transistors	Tubes/ Transistors
50 MHY	90 MHY	370 MHY	370 MHY
320 Ω	600 Ω	2.2 K	2.2 K
150 KC	100 KC	80 KC	80 KC
****	****	****	****
220 Ω	220 Ω	690 Ω	690 Ω
0.5-MIL	0.1-MIL	0.1-MIL	0.05-MIL
****	****	****	****
.071-IN.	.071-IN.	.071-IN.	.071-IN.
****38 DB	****38 DB	****38 DB	****38 DB
CHARACTERISTICS USING 3M190 TAPE			
0.60 MA	0.70 MA	0.30 MA	0.33 MA
7 V.	15 V.	30 V.	50 V.
60 UA	60 UA	34 UA	32 UA
—	0.7 MV	1.4 MV	1.4 MV
—	−1 DB	0 DB	+1 DB
CHARACTERISTICS USING 3M190 TAPE			
0.50 MA	0.50 MA	0.22 MA	0.20 MA
6 V.	10 V.	25 V.	35 V.
50 UA	50 UA	30 UA	25 UA
—	0.5 MV	1.1 MV	1.0 MV
—	−9 DB	−8 DB	−6 DB
CHARACTERISTICS USING 3M190 TAPE			
NOT AVAILABLE IN STANDARD VERSION			

2-TRACK (.080 IN. WIDTH) MONO—B1HY, G1H, G1HY, F1H, A1HC, E1HC (Hyperbolic of A1HC) STEREO—B2H, A2H, E2H (Hyperbolic of A2H)					
4R	**4K**	**6K**	**7K**	**7F**	**2K**
Record Only	Record/ Playback	Record/ Playback	Record/ Playback	Record/ Playback	Record/ Playback
Tubes/ Transistors	Transistors	Transistors	Tubes/ Transistors	Tubes/ Transistors	Tubes
50 MHY	100 MHY	200 MHY	400 MHY	500 MHY	800 MHY
320 Ω	650 Ω	1.3 K	2.5 K	3.3 K	5 K
200 KC	100 KC	100 KC	100 KC	80 KC	60 KC
70 Ω	70 Ω	110 Ω	165 Ω	165 Ω	400 Ω
130 Ω	130 Ω	245 Ω	410 Ω	410 Ω	720 Ω
—	—	—	—	—	—
0.5-MIL	0.1-MIL	0.1-MIL	0.1-MIL	0.05-MIL	0.1-MIL
.160-IN.	.160-IN.	.160-IN.	.160-IN.	.160-IN.	.160-IN.
—	—	—	—	—	—
55 DB	55 DB	55 DB	55 DB	55 DB	55 DB
(3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED					
0.70 MA	0.80 MA	0.40 MA	0.33 MA	0.46 MA	0.25 MA
9 V.	20 V.	30 V.	40 V.	55 V.	55 V.
75 UA	80 UA	60 UA	40 UA	46 UA	30 UA
—	1.2 MV	1.8 MV	2.4 MV	2.2 MV	3.6 MV
—	+1 DB	+1 DB	+2 DB	+3 DB	+3 DB
(3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED					
0.60 MA	0.70 MA	0.30 MA	0.22 MA	0.37 MA	0.20 MA
8 V.	15 V.	25 V.	30 V.	45 V.	40 V.
65 UA	66 UA	45 UA	30 UA	37 UA	22 UA
—	0.9 MV	1.2 MV	1.8 MV	1.5 MV	2.4 MV
—	−7 DB	−7 DB	−6 DB	−4 DB	−5 DB
(3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED					
—	1.1 MA	0.70 MA	0.6 MA	—	0.4 MA
—	20 V.	30 V.	45 V.	—	65 V.
—	80 UA	60 UA	45 UA	—	30 UA
—	1.1 MV	1.7 MV	2.2 MV	—	3.4 MV
—	−3 DB	−3 DB	−1 DB	—	−1 DB

FULL TRACK (.260 IN. WIDTH) SLF (Cylindrical Face) SLFH (Hyperbolic Face)		
7R	**4R**	**3L**
Duplicating Record	Record Only	Record/ Playback
Tubes/ Transistors	Tubes/ Transistors	Tubes/ Transistors
9 MHY	55 MHY	250 MHY
60 Ω	350 Ω	1.5 K
500 KC	250 KC	80 KC
6 Ω	125 Ω	200 Ω
—	—	—
—	—	—
0.5-MIL	0.5-MIL	0.16-MIL
—	—	—
—	—	—
—	—	—
12 DB BELOW TAPE SATURATION		
4.0 MA	0.8 MA	1.2 MA
9 V.	24 V.	40 V.
320 UA	100 UA	90 UA
—	—	4.0 MV
—	—	0 DB
12 DB BELOW TAPE SATURATION		
3.7 MA	0 7 MA	0.9 MA
8.5 V	20 V.	30 V.
250 UA	90 UA	80 UA
—	—	3.0 MV
—	—	−12 DB
12 DB BELOW TAPE SATURATION		
NOT AVAILABLE IN STANDARD VERSION		

Specifications subject to change without notice

•ERASE

4-TRACK (Quarter Track)
2-TRACK (Half Track), FULL TRACK

Erase heads are shown with various mounts, but all are available in your choice of **base, side, rear** or **no mount.**

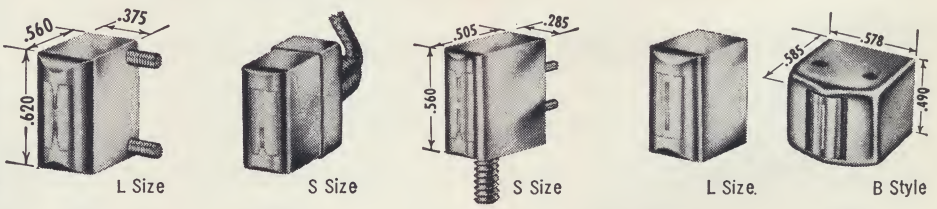
TO DETERMINE ERASE MODEL NUMBER, select a basic model number, add the erase electrical code, add a dash (-) and add mounting designator (below). Following are typical examples:

MEHI-SU, 2-track (half track) mono erase head. #1 erase electrical code, *side* mount, track *up* (studs are to *left*).

SEQ4-R 12S, 4-track (quarter track) stereo erase head, #4 erase electrical code, rear mount, 12 inch shielded leads.

Erase Mounting Designator follows model number in this fashion: "SEH2-N9." No Mount. S size.

"-N2" standard no mount. L size.
"-B3" standard base mount. S size. For mono heads add a U for up or D for down after B3 to denote track up or track down.
"-S23" standard Side Mount. L size. For mono heads add a U for up or a D for down after S23 to denote track up or track down.
"-R-12S" standard Rear Mount and 12 inch shielded leads. S size.
(For "B" style heads, mounts are the same as for R/P heads).



SEQ (Side Mount) · MEH (Rear Mount) · SEH (Base Mount) · MEF (No Mount) · B1EF (No Mount)

TYPICAL SPECIFICATIONS FOR ERASE HEADS

TRACK SYSTEM	4-TRACK			2-TRACK			FULL TRACK	
NORTRONICS BASIC MODEL NUMBER	MONO—MEQ STEREO—SEQ, B2EQ			MONO—MEH, B1EH STEREO—SEH, B2EH			MEF B1EF	
Electrical Code	1	2	4	1	2	4	1	4
Inductance, 1 KC	80 MHY	0.13 MHY	10 MHY	80 MHY	0.20 MHY	8 MHY	40 MHY	3.6 MHY
Resistance, D.C.	240 Ω	1.8 Ω	38 Ω	190 Ω	1.8 Ω	30 Ω	88 Ω	25 Ω
†Erase Current Oper.	5 MA	120 MA	13 MA	6 MA	120 MA	20 MA	13 MA	40 MA
Impedance, 60 KC	30 K	40 Ω	3 K	25 K	50 Ω	2 K	12 K	1 K
Voltage, 60 KC RMS.	120 V.	5 V.	40 V.	120 V.	6 V.	40 V.	120 V.	40 V.

†For 56 DB erasure of saturated tape.

Specifications subject to change without notice.

8107-10th AVENUE NORTH
MINNEAPOLIS, MINNESOTA 55427

Nortronics®

Nortronics®

MINIATURE SERIES TAPE HEADS FOR MAGNETIC DRUMS, DISCS, FILM STRIPES AND MINIATURE RECORDERS

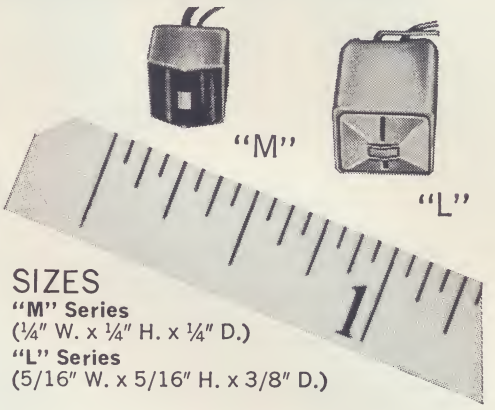
The Nortronics "L" and "M" series of magnetic heads are miniature in size but high in performance.

The "L" heads, measuring only .312" x .312" x .375" deep, incorporate laminated cores plus an all-metal face to reduce oxide loading problems. They are available in either a hyperbolic flush face contour for use with tape, or with relieved face giving a projecting track for drum, film, or disc contact operation. Track widths can be supplied from .006" to .042" in .006" increments, and inductances to order. Mountings are base or rear mount with #2-56 stud, or else the no-mount style.

The "M" heads are even smaller; ¼" cubed in dimensions. R/P track widths are .045" and .070", with plastic face either flush or relieved. Base, side, rear, or no-mount styles can be supplied. Various inductances are available.

PARTIAL LISTING OF MINIATURE RECORD/PLAY HEADS

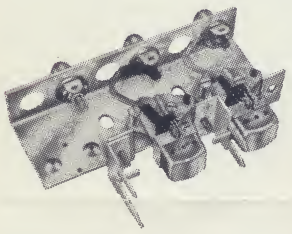
Model Number	L42R8L	L24R2K	L24R8L	L12R8K	M70R4L	M45R2K
Type of Head	Record/ Playback	Record/ Playback	Record/ Playback	Record/ Playback	Record/ Playback	Record/ Playback
Inductance, 1 KC	80 MHY	200 MHY	40 MHY	30 MHY	20 MHY	45 MHY
Impedance, 1 KC	500 Ω	1.2 K	250 Ω	200 Ω	130 Ω	270 Ω
Resistance, D.C.	128 Ω	400 Ω	125 Ω	125 Ω	80 Ω	312 Ω
Gap Spacer	0.16-MIL	0.10-MIL	0.16-MIL	0.10-MIL	0.16-MIL	0.10-MIL
Track Width	.042-IN.	.024-IN.	.024-IN.	.012-IN.	.070-IN.	.045-IN.
Average 7.5 IPS constant current Record/Playback characteristics using 3M190 tape peak biased at 1 KC and recorded 12 DB below tape saturation at 1 KC.						
Peak Bias, 60 KC	0.70 MA	0.33 MA	0.65 MA	0.75 MA	2.0 MA	0.65 MA
Record Current	60 UA	30 UA	50 UA	60 UA	100 UA	60 UA
1 KC Output	1.0 MV	1.0 MV	0.45 MV	0.25 MV	0.6 MV	1.2 MV
10 KC/1 KC Ratio	0 DB	+2 DB	0 DB	0 DB	−8 DB	−3 DB



SIZES
"M" Series
(¼" W. x ¼" H. x ¼" D.)
"L" Series
(5/16" W. x 5/16" H. x 3/8" D.)

Erase Heads in same size and mountings can also be furnished. A representative "L" erase model is the L42E6 with an erase track width of .042", 5 mhy. inductance, operating at a 60 kc voltage of 40 volts rms and 36 ma. A typical "M" erase model is the M90E3 with 0.090" track, 15 mhy. inductance, operating at a 60 kc. voltage of 43 volts rms and 10 ma.

ACCESSORIES & COMPONENTS



New Cartridge Mount

Revolutionary new head mounting assembly for cartridge tape handlers which use the endless loop tape cartridges of the Fidelipac and Viking type. Eliminates the need for rear-mount style heads with their awkward mounting and adjustment problems. Offers "Micrometer" adjustments of head height, azimuth, and face perpendicularity. Lock screw on each head bracket "freezes" the adjustments.

Up to three heads may be mounted on an assembly, using *no-mount* R/P heads of the "A", "B", and "G" types plus *no-mount* erase heads of the small-case size. Heads are fastened to bracket with a quick-release screw clamp. Replacement is a matter of seconds when heads are connected with the #105-20 plugs.

Two types of fork tape guides can be used to accurately control tape height with respect to tracks on head. The #173-16 standard guide can be used on either or both sides of the head which is located adjacent to the capstan. The #173-17 is a special brake release type of fork which is used to release the shroud brake of the larger Viking metal cartridges.

#810-045 "B" Dual-Head Cartridge-Mount Kit supplied unassembled. Includes channel base, four jacks, two #810-042 brackets for "A" and "B" size heads, one #173-16 tape guide, and two #105-20 head plugs.

#810-046 "G" Dual-Head Cartridge-Mount Kit. As above but with two #810-043 brackets for "G" size mono R/P heads.

#810-044 Head Bracket and Hardware for no-mount small case erase heads.

BIAS OSCILLATOR TRANSFORMERS

T60 SERIES

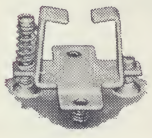
. . . for transistor or vacuum tube circuits. Ferrox-cube E-cores and special low resistance windings insure maximum efficiency. Other features: High "Q" stable voltage and frequency; pure waveform; aluminum can 1⅛" diam. x 1⅜" L. with spade lugs.

T60T2—For transistor circuits, push-pull or single-ended supplies erase and bias power up to 100 kc. for medium and high impedance heads. Tapped secondary delivers 40 V., 80 V., and 120 V. rms to #4 and #1 erase heads.

T60E—For vacuum tube circuits, push-pull erase and bias power at operating frequencies from 40 kc. to 70 kc.; 120 V. rms to #1 erase heads and 7 V. rms to #2 erase heads.

T60-F—For vacuum tube circuits, push-pull erase and bias power at operating frequencies from 70 kc. to 100 kc.; output 150 V. rms tapped at 60 V. for high and medium impedance (#1 and #4) erase heads.

UNIVERSAL MOUNTING BRACKETS



Designed for simplified mounting plus ease in adjustments.

These universal head mounting brackets provide for convenient adjustment of head azimuth, height, and tilt. Heads are easily snapped in and out of brackets, which are accurately positioned by means of "Micrometer" adjustment screws. Brackets are made of cadmium-plated steel and are supplied with mounting screws and spring—and can be combined with other Nortronics accessories to make various complete mounting assemblies.

#810-027 Bracket. For "A", "B", and "E" style no-mount heads.

#810-028 Bracket. For "G" size heads.

#810-041 Bracket. For small-case no-mount erase heads.

SINGLE HEAD NEST

MODEL 810-024

Unique design single-head assembly which includes adjustable brackets, tape guide posts and mounting plate. Ideal for use as a self contained head mounting and tape guidance unit for Nortronics combo heads. Fits all "A", and "B" style heads.

PIN CLIP AND CABLE ASSEMBLIES

Provided to make neat and simple electrical connection to the terminal pins of Nortronics heads. No. 26 insulated wire covered with shield braid, with 109-54 pin clips. Available in Red-Orange, Yellow-Blue, White-Black, and Red-Black wire in 9" or 24" lengths.

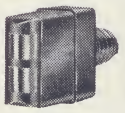
139 SERIES

TAPE GUIDE POST

MODEL 173-13

A universal guide post for ¼" tape—may readily be mounted to control the path of tape travel. Chrome plated brass insures long life and friction-free operation. Height is readily adjustable by loosening the locking set screw and rotating the threaded post.

CONTACTOR HEAD



MODEL CH3

Use with metal-foil cueing to operate relay. Has two isolated contactor plates. Model CH3-R-4U has rear mount and 4" leads. Model CH3-N6 is no-mount small-case size. CH3-B3 is base mount.

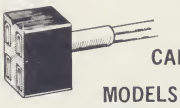
CONNECTOR PLUG

MODEL 105-20

4-Pin Black Phenolic Plugs permit instant connection to all 4 pins of Stereo Heads and 2 Pins of Mono Heads. 105-20 plug is for all Nortronics heads except SLF, SLFH, and older stereo and mono models. 105-18 plug is for SLF, SLFH, and older stereo and mono models.

PIN CLIPS—MODEL 109-54

The 109-54 is a gold plated beryllium copper push-on pin clip formed to fit the terminal pins of all Nortronics heads. Lead wires may be easily soldered to the small end of the clip, leaving the larger end open to push on to the terminal pins. Pin clips or plugs, permit ready attachment or removal of leads to terminals of heads, and also eliminate damage to head caused by soldering leads directly to pins.



PLUG AND CABLE ASSEMBLY

MODELS 139-70 — 139-77

Assemblies ready to plug onto Head Terminal Pins. Consist of proper plug and two shielded cables (nominal length 18" each). **139-70** is used with all Nortronics heads except for the SLF, SLFH and mono-combo; **139-77** for mono-combo heads only; **139-69** for SLF, SLFH, and older stereo and mono models.

Nortronics®

8107-10th AVENUE NORTH
MINNEAPOLIS, MINNESOTA 55427

FORM NO. 7177

PRINTED IN U.S.A.

A Division of Northrop Corporation
Marine Equipment Department
60 B Street, Needham Heights, Massachusetts 02194

NORTHROP NORTRONICS

March 31, 1967

SUBJECT: Spectral Contour Plotter

Gentlemen:

Thank you for your inquiry regarding the Spectral Contour Plotter

We are reviewing our current and future plans pertaining to the Model ST-701 Spectral Contour Plotter, related equipments and services.

We appreciate your interest and will advise you further as soon as these plans are finalized.

Yours very truly,

Stephen B Kemp

Stephen B. Kemp
Assistant to Vice President & Manager
Needham Department

NORTON MAGNETIC HEADS

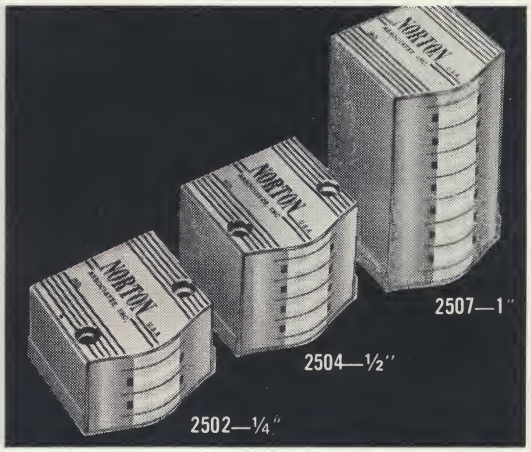
SERIES 2500

CROSSTALK — 60 DB

Track Width—.050 — Track Spacing—.140 ctoc

INDUCTANCE mh	MAXIMUM RATING AT 75°C ma rms	TYPICAL OPERATION				
		RECORD WITH BIAS			RECORD W/O BIAS	
		BIAS ma rms	RECORD ma rms	PLAYBACK 0 DB mv rms	RECORD ma pk to pk	PLAYBACK 0 DB mv pk to pk
4	20	4.0	.50	1.0	10.	5.0
15	10	2.0	.25		5.0	
60	5	1.0	.12		2.5	
250	2.5	.5	.06		1.3	

NUMBER OF TRACKS	TAPE WIDTH	CATALOG NUMBER		
		SERIES	INDUCTANCE	FUNCTION
2	¼″	2502	4, 15, 60 or 250	R, R/P or P
3	½″	2503		
4		2504		
7	1″	2507		



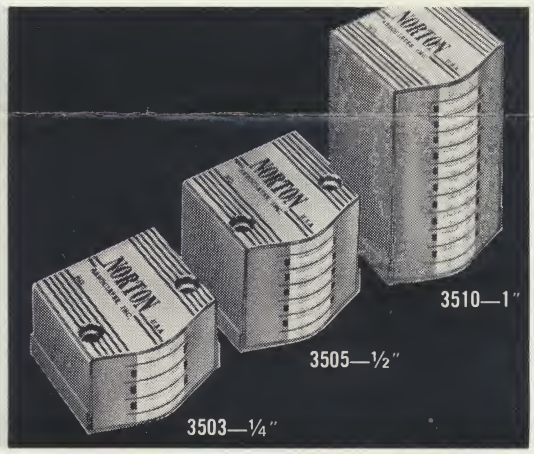
SERIES 3500

CROSSTALK — 60 DB

Track Width—.040 — Track Spacing—.100 ctoc

INDUCTANCE mh	MAXIMUM RATING AT 75°C ma rms	TYPICAL OPERATION				
		RECORD WITH BIAS			RECORD W/O BIAS	
		BIAS ma rms	RECORD ma rms	PLAYBACK 0 DB mv rms	RECORD ma pk to pk	PLAYBACK 0 DB mv pk to pk
4	20	3.5	.45	0.9	9.0	4.5
15	10	1.7	.22		4.5	
60	5	.9	.11		2.3	
250	2.5	.45	.06		1.2	

NUMBER OF TRACKS	TAPE WIDTH	CATALOG NUMBER		
		SERIES	INDUCTANCE	FUNCTION
3	¼″	3503	4, 15, 60 or 250	R, R/P or P
5	½″	3505		
10	1″	3510		



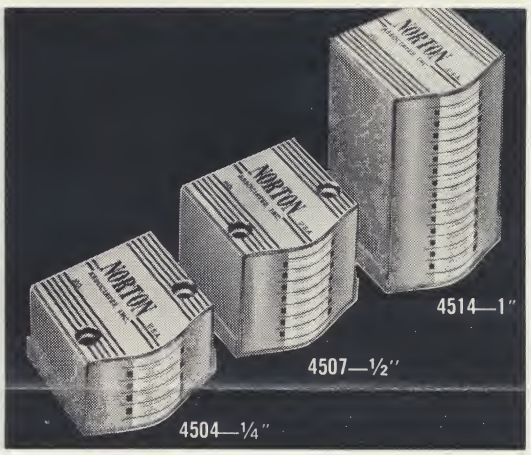
SERIES 4500

CROSSTALK — 50 DB

Track Width—.032 — Track Spacing—.070 ctoc

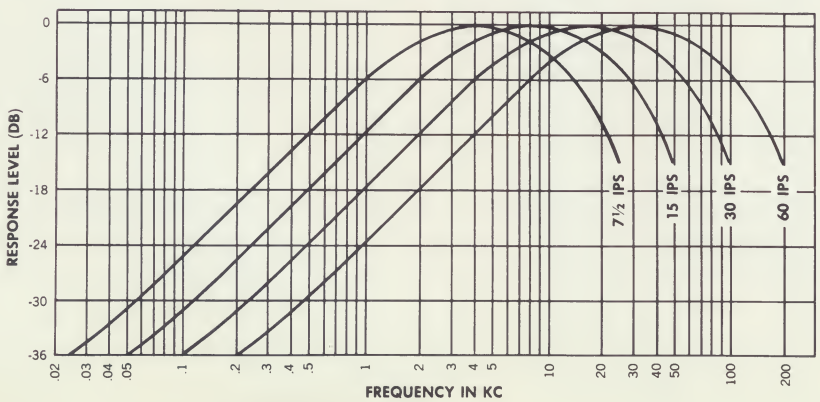
INDUCTANCE mh	MAXIMUM RATING AT 75°C ma rms	TYPICAL OPERATION				
		RECORD WITH BIAS			RECORD W/O BIAS	
		BIAS ma rms	RECORD ma rms	PLAYBACK 0 DB mv rms	RECORD ma pk to pk	PLAYBACK 0 DB mv pk to pk
4	16	3.0	.4	0.8	8.0	4.0
15	8	1.5	.2		4.0	
60	4	.8	.1		2.0	
250	2	.4	.05		1.0	

NUMBER OF TRACKS	TAPE WIDTH	CATALOG NUMBER		
		SERIES	INDUCTANCE	FUNCTION
4	¼″	4504	4, 15, 60 or 250	R, R/P or P
7	½″	4507		
14	1″	4514		



RESPONSE/FREQUENCY CHARACTERISTIC, FREQUENCY RANGE & LEVEL DATA

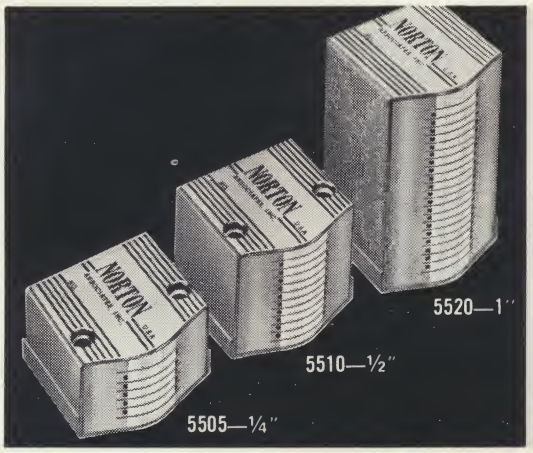
Unequalized playback, constant current recording vs tape speed and impedance.



Inductance mh	Impedance @ 1 KC K	Recommended Max. Freq. KC	Response Level (DB) At Other Tape Speeds (IPS)			
			7½	15	30	60
4	.03	400	—18	—12	—6	0*
15	.1	200	—12	—6	0*	+6
60	.4	100	—6	0*	+6	+12
250	1.6	60	0*	+6	+12	+18

*shown on chart (on 3M 459 tape or equal)

The Response/Frequency Characteristic shown, together with the record and play data specified for each Series above illustrates the exceptional performance capabilities of these miniature high performance magnetic heads. High output at short wave lengths together with a maximum contour effect deviation of ±2 DB from the 6 DB/octave slope at long wave lengths provides a useful bandwidth of over 6 octaves at any tape speed.



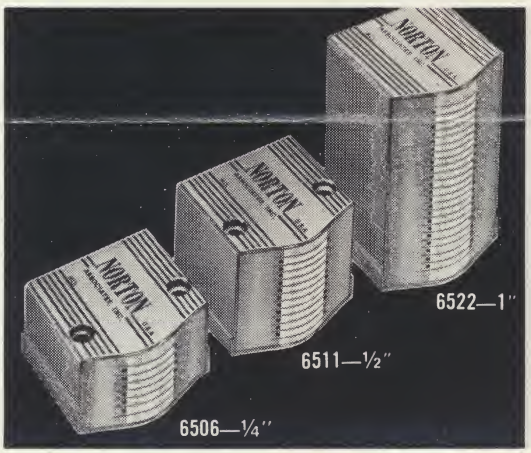
SERIES 5500

CROSSTALK — 40 DB

Track Width—.025 — Track Spacing—.050 ctoc

INDUCTANCE mh	MAXIMUM RATING AT 75°C ma rms	TYPICAL OPERATION				
		RECORD WITH BIAS			RECORD W/O BIAS	
		BIAS ma rms	RECORD ma rms	PLAYBACK 0 DB mv rms	RECORD ma pk to pk	PLAYBACK 0 DB mv pk to pk
4	14	2.8	.35	0.7	7.0	3.5
15	7	1.4	.18		3.5	
60	3.5	.7	.09		1.8	
250	2	.35	.045		.9	

NUMBER OF TRACKS	TAPE WIDTH	CATALOG NUMBER		
		SERIES	INDUCTANCE	FUNCTION
5	¼″	5505	4, 15, 60 or 250	R, R/P or P
10	½″	5510		
20	1″	5520		



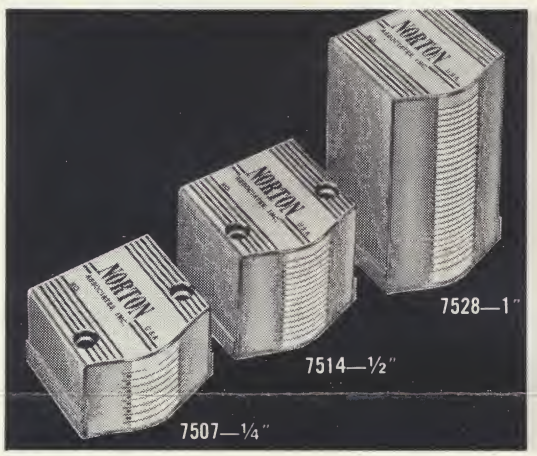
SERIES 6500

CROSSTALK — 40 DB

Track Width—.018 — Track Spacing—.045 ctoc

INDUCTANCE mh	MAXIMUM RATING AT 75°C ma rms	TYPICAL OPERATION				
		RECORD WITH BIAS			RECORD W/O BIAS	
		BIAS ma rms	RECORD ma rms	PLAYBACK 0 DB mv rms	RECORD ma pk to pk	PLAYBACK 0 DB mv pk to pk
4	12	2.5	.30	0.6	6.0	3.0
15	6	1.2	.15		3.0	
60	3	.6	.08		1.5	
250	2	.3	.04		.8	

NUMBER OF TRACKS	TAPE WIDTH	CATALOG NUMBER		
		SERIES	INDUCTANCE	FUNCTION
6	¼″	6506	4, 15, 60 or 250	R, R/P or P
11	½″	6511		
22	1″	6522		



SERIES 7500

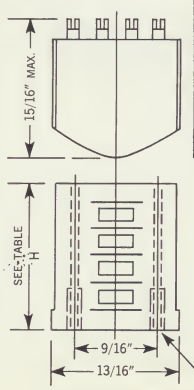
CROSSTALK — 40 DB

Track Width—.012 — Track Spacing 7507 — .038 ctoc
7514, 7528 — .036 ctoc

INDUCTANCE mh	MAXIMUM RATING AT 75°C ma rms	TYPICAL OPERATION				
		RECORD WITH BIAS			RECORD W/O BIAS	
		BIAS ma rms	RECORD ma rms	PLAYBACK 0 DB mv rms	RECORD ma pk to pk	PLAYBACK 0 DB mv pk to pk
4	10	2.0	.25	0.5	5.0	2.5
15	5	1.0	.12		2.5	
60	2.5	.5	.06		1.2	
250	1.5	.25	.03		.6	

NUMBER OF TRACKS	TAPE WIDTH	CATALOG NUMBER		
		SERIES	INDUCTANCE	FUNCTION
7	¼″	7507	4, 15, 60 or 250	R, R/P or P
14	½″	7514		
28	1″	7528		

OUTLINE & MOUNTING DIMENSIONS SERIES 2500 THRU 7500



TAPE WIDTH	HGT. H	MOUNTING HOLES
¼	7/16	4-40 thru
½	5/8	4-40 x ¼ DP EACH END
1	1¼	4-40 x ¼ DP BOTTOM ONLY

STANDARD FEATURES include extremely low crosstalk ratings and +75°C temperature operation without derating. Rugged solid metal construction, shock and vibration resistant, provides a hard, stable, low friction, long wear surface for the tape. The cores, shields and all metallic members are mechanically and electrically bonded together for effective electrostatic shielding and grounding of static charges. Precision finishing of the recording face to micro-inch tolerance insures intimate contact of the tape with every channel for uniformly excellent response independent of track location. The rear terminal board carries two terminals per track.

To specify the complete catalog number for ordering purposes designate the Series number of the head you require, the inductance in mh and the function ie. Record only, Record/Play, or Play only, as in the following example: Catalog #4507-15P which is the Series 4500, 7 track, 15mh Play Head for ½″ tape.

NORTON ASSOCIATES, INC.
240 OLD COUNTRY RD., HICKSVILLE, N. Y. • 516-OV 1-6181